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## PATENT ABSTRACTS OF JAPAN

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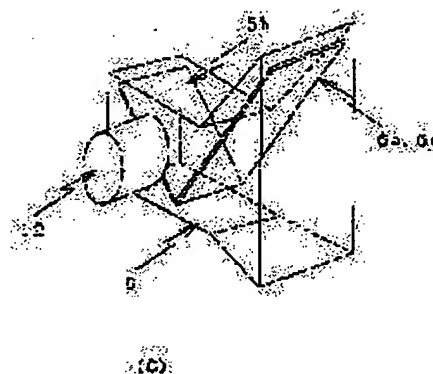
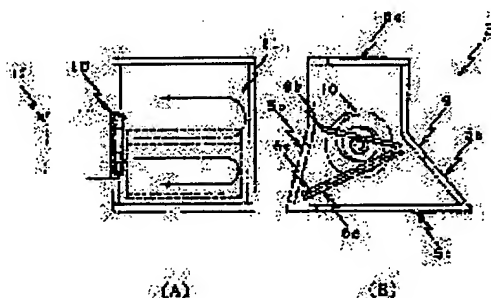
(72)Inventor : MORI SUKEYUKI  
TERAI TAKASHI

## (54) IMMERSION OPTICAL DEVICE

## (57) Abstract:

PURPOSE: To eliminate the unequal temp. which is the cause for making a refractive index nonuniform by forcibly stirring the liquid in an immersion optical device by a stirrer for a polarization beam splitter immersion optical device and dichroic mirror immersion optical device to be used for a reflection type liquid crystal projection device.

CONSTITUTION: A dichroic mirror 6a for red and a dichroic mirror 6b for green are fixed into the side face parts within an optical case 9 consisting of transparent materials, such as glass, in the state of providing these dichroic mirrors with spacings to allow convection of liquid 11. The optical case 9 is formed to a perfectly hermetic structure in the state of mounting a propeller device 10 for stirring installed on the one interior side face. The liquid 11 is packed thereon. This immersion optical device is composed of such optical case and the stirrer for stirring the liquid 11 with a rotational driving device 12.



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